REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Amendments to Specification and Claims

The abstract has been amended to be less than 150 words long, as required in item 3 on page 2 of the Official Action.

Claim 1 has been amended to delete the periods after the second and third limitations, as required in item 4 on page 2 of the Official Action. In addition, periods have been added to claims 4, 6, and 10, and a grammatical error has been correct in claim 5.

Finally, claim 1 has been amended to define the functions $d^I(X_i, Q)$ and $d^L(X_i, Q)$, and the "final value of d_{min}."

2. Rejection of Claims 1-11 Under 35 USC §102(b) in view of "*Efficient Content-Based Retrieval: Experimental Results*" (Berman *et al.*)

This rejection is respectfully traversed on the grounds that the Berman *et al.* article fails to disclose or suggest:

- a ***multi***-resolution data structure, as positively recited in claim 1 (as opposed to Berman's use of multiple candidates in a non multi-resolution data structure);
- using the initial minimum distance as the distance comparison threshold, as recited in claims 2 and 3;
- the inequality of claim 4 (which has nothing to do with Berman's inequality based on multiple key images); and
- a cluster based search procedure, as recited in claim 5 (Berman does not appear to recognize the concept of a cluster).

The claimed invention is a fast search algorithm based on multi-resolution data structure. All of the data are constructed in multi-resolution form, and the method of the invention finds

the best match only after the positively recited step of "***deriving the multi-resolution structure of a query Q,***" by comparing the given query Q with each candidate match from the lowest resolution (deriving "$d^l(X_i, Q)$") to the finest resolution (deriving "$d^L(X_i, Q)$") step by step, *i.e.*, by a "coarse-to-fine" fast search.

In contrast, the method described in the Berman article defines multiple key images, which do not correspond to the claimed multi-resolution data structure, and therefore the step of "*deriving the multi-resolution structure of a query Q*" has no correspondence in the method of Berman. Instead, according to Berman's method, the distances between the query and key images are computed, after the distance between *every* candidate image and *each* key image has been calculated in advance prior to the search procedure. Then, according to the well-known triangle inequality, the absolute difference of the distance between *every* candidate image and *each* key image, and the distance between the given query and the key image, is compared with the current minimum so that the range of the probable candidates can be narrowed. The result of the multiple key image comparisons is neither as fast as the claimed invention nor even a full search, and there is no suggestion of the claimed multi-resolution data structure.

Because the Berman article fails to disclose or suggest the multi-resolution data structure recited in claim 1 or the above-noted features recited in claims 2-5, it is respectfully submitted that claims 1-11 are neither anticipated nor rendered obvious by Berman, and withdrawal of the rejection of claims 1-11 in view of the Berman patent is respectfully requested.

Having thus overcome each of the rejections made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

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Date: June 15, 2005

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